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ABSTRACT

Options are presented in this paper for the imaginative use of questions in content area study. An argument is made against the stereotyped use of questions to test factual recall and for the use of questions to expand instruction in content study to stimulate higher levels of thinking and learning activities. Suggestions and examples are provided for prereading questioning at different levels of comprehension. (MKM)

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Title: Raising the Level of Content Study Through Question Planning

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Question planning affects the way students interact with content before, during, and after reading. Traditionally, questions are posed after a content reading to assess students' assimilation of information. However, planning for both question type and question sequence may influence greater student involvement and productivity during all phases of a content assignment. Skill in question planning can raise the students' level of inquiry in the content theme. Therefore, a major goal of the content area teacher should be to nurture independent reading-thinking habits to include inquisitiveness, critical thinking, and evaluation of ideas.

Question planning may be viewed from two perspectives. The first is a pre-reading perspective in which questioning has a readiness function. Goals of pre-reading questioning are to provide a mental set, accommodate existing knowledge, and to kindle curiosity. The second refers to questioning activity that accompanies or follows the reading and/or study of a content selection. Both express a cognitive strategy. Both can motivate the reader's intellectual curiosity towards actively engaging the specific assignment as well as initiating additional research or study about the content theme. Before this can be achieved, content teachers must recognize that questioning as an intellectual activity has the potential to influence thinking and subsequent reading behavior.

Training the Inquisitive Reader

During pre-reading questioning, the teacher activates thought by engaging readers in making predictions about issues posed in the content. By predicting solutions before reading, anticipation is aroused. The inquisitiveness generated in establishing predictions becomes the motivating force in seeking information through the content reading assignment. For instance, if students appear indifferent towards a reading assignment covering Patterns of Economic Organization (Pulliam et al, 1977) cited in an example to follow, they may become more actively engaged if the content is related to the existing

oil crises, which is within their present realm of experience. By asking students to predict what will happen to their own driving decisions, the future of the auto industry, or what they themselves could do to check spiralling gasoline prices, the teacher has aroused a need to read with critical interest beyond the basic translation level. Curiosity leads to a higher degree of commitment as students purposefully seek information to reach valid conclusions.

Study guide procedures present other dimensions in training an indepepdent, questioning reader (Robinson, 1961; Thomas and Robinson, 1977). Perhaps the key element in applying the techniques of such study formulas in content reading is the questioning component. The reader learns to rapidly preview or survey the selection while generating questions about the meaning of the content itself. This is accomplished by asking how the selection is organized, what clues to meaning are contained in headings, and how do the graphic devices highlight thematic information. By formulating questions in rapid and successive fashion during the preview stage, the reader fixes the subject, organization, and scope of the content in mind. Comprehension is strengthened while the processes of searching, inquiring, and conceptualizing develop.

Reading and study guides assume that the reader will more actively engage the content if pre-reading questioning becomes an integral part of the overall study plan. Whether teacher directed or student initiated, pre-reading questioning can assist students in any one of six following ways:

1. Relate the reader's experience and background to the new content;

   Q. How many of you have earned income?
   Q. What types of jobs did you have?
   Q. What was the source from which you were paid?

2. Pre-assess the reader's knowledge of meanings and ideas that will be encountered in the content;

   Q. What is meant by a command economy?
   Q. What does entrepreneur mean?

3. Act as an organizational guide and provide a key to the structure of the particular content lesson;

   Q. How does it help us to know that there are only three basic patterns of economic organization?

4. Arouse the curiosity of the reader to engage new information or ideas presented in the content;

   Q. Do you know why income taxes were founded in the American economy?
   Q. What decision can each of you make in the near future to affect the economy?

5. Motivate the reader to go beyond the scope of the present content to investigate themes or issues in other sources;

   Q. I wonder what kind of economies the world powers have today?
   Q. How do the economic systems of the OPEC nations affect their decisions on prices and distribution of oil?

6. Influence readers to adopt a questioning, inquiring behavior before approaching content selections.

   Q. What would you want to know about different patterns of economic organization and how they affect your life style?

Planning Questions for Content Study

The impact questions may have upon involving students in challenging encounters with content material has been generally underestimated. Research has been quite consistent in showing that questions have been primarily used to promote factual recall (Gall, 1970; Guszak, 1967).

Traditionally, questions have been valued as a strategy for highlighting important facts, for summarizing ideas and concepts, and for promoting understanding of technical information. However, as the following examples will illustrate, question planning may stimulate higher level thinking activity by requiring students to use content in a variety of interesting ways.

Our example is based upon a content selection related to a discussion of different kinds of economic organizations found in a high school text in economics (Pulliam et al, 1977). In this content selection the authors discuss two major themes: (1) the basic questions related to goods and services that every society must address; and (2) the different responses to these fundamental questions that become the defining characteristics of three kinds of economic organization.

Herber's treatment of the levels of comprehension suggests that the study of content should proceed through three levels; the literal, the interpretive, and the applicative (1970). This approach to content study is illustrated in Example 1 with questions based on the sample content selection that focus upon one type of economy.

Example 1. Herber's Levels Applied to Questioning

The Traditional Economy

Question	Level
1. How are decisions about production and distribution made in a traditional economy?	1. Literal

2. What do the authors mean when they state that traditional economies were "begun by a process of trial and error?"	2. Interpretive
3. Give an example of an economic decision in our country based upon traditional means <u>not</u> mentioned in the text.	3. Applicative

Such a structuring of content may be useful and even necessary for some learners, but it is questionable whether it is effective for all learners. Students who have low frustration tolerance for making inferential leaps or those with restrictive vocabularies or limited experiential backgrounds may benefit from being guided from simpler to more complex study of the content in a manner such as that prescribed by Herber.

However, if the content area teacher values instructional goals that include having learners develop independent study skills, use critical thinking, apply information to render logical judgments, etc., then sequencing content study from simpler to more complex tasks for students may not always be desirable. Such goals would seem to necessitate instructional planning that requires learners to not only discover facts, but also <u>use</u> them in a variety of challenging ways.

Example 2 contains a Comprehension level question that enables students to translate forms - from text to construction of a table (Bloom, 1956). It necessitates factual recall and then using these facts in a structure to organize some of the main ideas in the content selection.

Example 2. Comprehension Level Entry Question

<u>Question</u>

Make a summary chart in which you compare the three patterns of economic organization according to the 4 basic decisions every society must make.

<u>Response Might Resemble This Categorization</u>

Type of <u>Economy</u>	What Will <u>Be Produced</u>	How Much Will <u>Be Produced</u>	How Will It <u>Be Produced</u>	Means of <u>Distribution</u>

The learning activity generated by this question may be expanded to an even higher level if the student is presented with a theoretical situation such as "The First Rubber Tire" episode described in Example 3. The Application (Bloom, 1956) question that follows requires the student to not only construct a chart similar to that found in Example 2, but it asks that the information contained therein be applied to a theoretical situation.

Example 3. Application Level Entry Question

THE FIRST RUBBER TIRE

Suppose that the following situation occurred in a small village:

For as long as anyone can remember, the older women in this village have been responsible for collecting rubber from rubber trees. They collect the liquid rubber, treat it to harden it, and then carve various toy dolls, balls, and so forth, to be given to children as playthings. One day, while transferring the liquid rubber from a collection container into the carrying container in her two-wheeled wagon, one woman spilled some of the liquid rubber on the surface of her wagon wheel. On the way back to the village, she noted that that wheel ran more smoothly and much quieter then before. She had discovered a new use for rubber-coating wagon wheels. Excited about her discovery, she took her idea to the local council and asked the members whether she should share her discovery with others in the village, and if so, how she should do so. ("First Rubber Tire" from America Rediscovered... p. 17)

Question:

After reading "The First Rubber Tire" situation construct a summary chart showing how the types of economy would respond to the 4 basic decisions as they apply to the new discovery of coating wagon wheels.

Responses Might Resemble The Following Chart
(Example 2 Expanded)

Type of Economy	What will be produced	How much will be produced	How to produce	Means of Distribution
Traditional	Toy dolls, balls and rubber playthings as in the past.	The usual amount as was produced in the past.	Older women collect rubber, treat it and produce playthings.	Given to children as in the past.
Command	The Council would determine whether the rubber-coated wheels would be produced.	The Council would decide how many playthings and how many rubber wheels woule be produced.	If it is decided that rubber wheels will be produced, Council will define means of production.	The Council would define how the rubber wheels would be distributed.
Market	Playthings and rubber-coated wheels	This would depend on the amount of each product demanded by the people.	The inventor and/or production company would attempt to construct the most efficient means to produce.	Probably the goods would be displayed in a local market place.

An even greater challenge to content level study activity may be realized through the use of an Analysis (Bloom, 1956) level question such as in Example 4. This question would follow the presentation of "The First Rubber Tire" incident introduced in Example 3.

Example 4. Analysis Level Entry Question

Question:
Review the events and background information about the village described in "The First Rubber Tire" situation. On the basis of the history of the village, how will the Council respond to the woman's request? Explain your answer in terms of a pattern of economic organization that is consistent with the historical facts about the village.

If this type question initiates the content study, one can see its potential for motivating students to first search out the necessary and relevant question requirements. The additional element involved is the student's interlocking the relevant aspects of the situation to reach

a logical conclusion. Note how this question subsumes most of the responses to the lower order questions described earlier. The requirements for adequately responding to the questions found in Example 4 would probably include most, if not all, of the following:

1. The student must know the characteristics of economic organizations. (Knowledge Level)

2. The student must be able to interpret the statements in the anecdote in terms of economics, especially the 4 basic "economic questions." (Comprehension Level)

3. Before deciding upon the pattern or organization that seems to prevail in the village, the student must apply an abstraction to the situation. That is, he or she must review the definitions of the types of economic organizations and apply them to the "First Rubber Tire" situation. (Application Level)

4. The student must interrelate the elements of the Written Communication and connect them into an "organizational whole" to make a prediction about the Council's decision. (Analysis Level)

Summary

This paper has presented sound options for the use of questions in content study. The authors believe that in the hands of an imaginative curriculum planner, questions can have a far-reaching effect upon what students learn and how they learn. An argument has been made for avoiding the stereotyped use of questions to test factual recall. By example, it has been shown that questions can expand instruction in content study and may stiumlate higher levels of thinking and learning activities.

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